



International Workshop on Intelligent Technologies for HealthCare (ITCare-2014)

## Leveraging Cloud Based Virtual Care as a Tool Kit for mitigating Risk of Exposure during a Pandemic

Rajesh Vargheese\*

*Cisco, 12515 Research Blvd, Austin, TX, 78759, USA*

---

### Abstract

Pandemic is an epidemic occurring over a very wide area affecting large number of people when new strains emerge for which people have very less resistance and there are no readymade vaccines available. Pandemic can spread in a short amount of time from person to person and especially, the care givers that the patients with flu interact are at higher risk of exposure. Virtual care, leveraging collaboration technologies can be extremely useful in such situations to maintain essential services for patients and communities but limit the risk to your staff that is providing services by enabling social distancing. Leveraging dependent information vectors, analytics can be used to open up local clinics that are closer to affected population and can be operated remotely by providers to provide care at the same time not exposing themselves to the direct contact with patients. We will look at some unique ways that virtual care methods such as Telehealth, m-health and remote care can be leveraged to efficiently reduce the risk. These include, but not limited to such as video analysis based pre-evaluation of patients, remotely controlled lockers for sample collection, gesture and voice based non touch controls.

© 2014 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Peer-review under responsibility of the Program Chairs of EUSPN-2014 and ICTH 2014.

*Keywords:* Pandemic; Telehealth; Video; Virtual Care; healthcare; ICT; Cloud

### 1. Understanding Pandemic

Pandemic is an epidemic occurring over a very wide area affecting large number of people. This can happen when new strains emerge for which people have very less resistance and there are no readymade vaccines available and hence the disease spreads while preventive and medical care is developed to overcome the situation.

---

\* Rajesh Vargheese. Tel.: +1-512-378-6512  
*E-mail address:* [rvarghee@cisco.com](mailto:rvarghee@cisco.com)

The cost of just a seasonal flu is significant; the cost of pandemic can only be extrapolated. According to flu.gov<sup>1</sup>, each flu season, nearly 111 million workdays are lost due to the flu, amounting to approximately \$7 billion per year in sick days and lost productivity. A pandemic could cause not just the financial cost of lost productivity, but also result in wide spread loss of life if not managed well. While predicting the exact time for the next pandemic is impossible, preparing for one is an absolute must for businesses and communities to ensure the health of employees and citizens. WHO<sup>2</sup> and CDC lead the effort in providing recommendations and checklist for pandemic preparedness.

### *1.1. Pandemic Preparedness Strategies*

While there are many parts to the strategies for preventing the spread of the disease and maintaining business continuity during a pandemic, one of the most important strategy is the Isolation and Quarantine Strategy. The WHO checklist for influence pandemic preparedness planning, calls out for social distancing and quarantine, travel restrictions and at the same time stresses on maintaining essential services. This can be a challenge with conventional approaches of operations of in person services as your employees will be exposed to higher risk of getting the disease.

Virtual care, leveraging collaboration technologies can be extremely useful in such situations to maintain essential services for patients and communities but limit the risk to your staff that is providing services by enabling social distancing.

### *1.2. Understanding Exposure and Occupational Risk of Healthcare care givers*

As the news of the pandemic outbreaks occurs, and as patients start seeing flu like symptoms, it's natural for patients to show up in hospitals and urgent care centres. The care givers that the patients with flu interact are at higher risk of exposure. The US occupational safety and health administration (OSHA) has classified healthcare workplaces to be at very high or high exposure risk<sup>3</sup> for pandemic influenza. For example, a personal that is collecting specimens from pandemic patients is at a very high risk of exposure.

According to CDC guidance<sup>4</sup>, People with flu can spread it to others up to about 6 feet away through droplets made when people with flu cough, sneeze or talk. So proximity and in person interactions must be managed carefully while services are provided.

If we were to track the imaginary path of the flu virus (as a person with flu travels to various places in a hospital), every interaction he has with a staff in person is a potential touch point where he can spread flu. It could be the parking lot, the lobby where he might be passing through healthy visitors, care givers or other patients, the staff at the registration/check-in desk, the nurse or the doctor in the examination room, the staff in the lab, the checkout desk, and list goes on.

Download English Version:

<https://daneshyari.com/en/article/487670>

Download Persian Version:

<https://daneshyari.com/article/487670>

[Daneshyari.com](https://daneshyari.com)